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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,422	01/26/2004	Hai Jin	1793.1189	4539

21171 7590 08/02/2010
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EXAMINER	
FEARER, MARK D	

ART UNIT	PAPER NUMBER
2443	

MAIL DATE	DELIVERY MODE
08/02/2010	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/763,422
Filing Date: January 26, 2004
Appellant(s): JIN ET AL.

Kari P. Footland
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 24 May 2010 appealing from the Office action mailed 02 October 2009.

(1) Real Party Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

1-27

(4) Status of Amendments After Final

Appellant's Response filed December 2, 2009 was considered for purposes of Appeal as indicated by the Advisory Action mailed December 22, 2009.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being

maintained by the examiner except for the grounds of rejection (if any) listed under the subheading “WITHDRAWN REJECTIONS.” New grounds of rejection (if any) are provided under the subheading “NEW GROUNDS OF REJECTION.”

NEW GROUND(S) OF REJECTION

Claims 14-26 stand finally rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant’s brief.

(8) Evidence Relied Upon

5668948	Belknap et al.	09-1997
20020145702	Kato et al.	10-2002
4680630	Field	07-1987
20030236912	Klements et al.	12-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 5-7, 11, 14, 18-20, 24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belknap et al. (US 5668948 A) in view of Kato et al. (US 20020145702 A1) and in further view of Field (US 4680630 A).

Consider claims 1, 14 and 27. Belknap et al. discloses a system and method of video splitting and allocation for clustered video servers, the method comprising: defining a structure of a network packet ((“Referring again to FIG. 1B a tape storage

node 17 includes a tape library controller interface 24 which enables access to multiple tape records contained in a tape library 26. A further interface 28 enables access to other tape libraries via an SCSI bus interconnection. An internal system memory 30 enables a buffering of video data received from either of interfaces 24 or 28, or via DMA data transfer path 32. System memory block 30 may be a portion of a PC 34 which includes software 36 for tape library and file management actions. A switch interface and buffer module 38 (used also in disk storage nodes 16, communication nodes 14, and control nodes 18) enables interconnection between the tape storage node 17 and low latency switch 12. That is, the module 38 is responsible for partitioning a data transfer into packets and adding the header portion to each packet that the switch 12 employs to route the packet. When receiving a packet from the switch 12 the module 38 is responsible for stripping off the header portion before locally buffering or otherwise handling the received data.") column 6 lines 66-67 and column 7 lines 1-17), a structure of a distributed control file (("When commands are issued over the control interface to start the streaming of data to an end user, control node 18 selects and activates an appropriate communication node 14 and passes control information indicating to it the location of the data file segments on the storage nodes 16, 17. The communications node 14 activates the storage nodes 16, 17 that need to be involved and proceeds to communicate with these nodes, via command packets sent through the low latency switch 12, to begin the movement of data.") column 8 lines 47-55), and a structure of a clip file (("Application commands are issued to media streamer 10 over the control interface. When data load commands are issued, the control node breaks the incoming

data file into segments (i.e. data blocks) and spreads it across one or more storage nodes. Material density and the number of simultaneous users of the data affect the placement of the data on storage nodes 16, 17. Increasing density and/or simultaneous users implies the use of more storage nodes for capacity and bandwidth.") column 8 lines 38-46); analyzing information of streaming media source files (("A media streamer in accordance with this invention comprises at least one storage node for storing a digital representation of a video presentation. The video presentation requires a time T to present in its entirety, and is stored as a plurality of N data blocks, each data block storing data corresponding approximately to a T/N period of the video presentation. The media streamer further comprises a plurality of communication nodes each having at least one input port and at least one output port; a circuit switch connected between the at least one storage node and input ports of the plurality of communication nodes, the circuit switch selectively coupling one or more of the input ports to the at least one storage node to enable the digital representation stored thereat to appear at one or more of the output ports; and at least one control node coupled at least to the plurality of communication nodes and to the at least one storage node for enabling any one of the N blocks to appear at any output port of any of the plurality of communication nodes.") column 3 lines 1-18); analyzing a clip file allocating requirements (column 8 lines 38-55); analyzing the streaming media source files to construct a splitting task list and relevant control files, according to the client's requirements (("Control node 18 receives a VS-CONNECT-LIST command with play subcommands indicating that all or part of FILE1, FILE2 and FILE3 are to be played in sequence. Control node 18 determines the

maximum data rate of the files and allocates that resource on a communication node 14. The allocated communication node 14 is given the detailed play list and initiates the delivery of the isochronous stream.") column 9 lines 65-67 and column 10 lines 1-5); creating several threads to split the streaming media source files, wherein each thread is responsible for splitting a streaming media source file (("Each thread works off a queue of requests. The request queue 106 for the output thread 102 contains requests that identify the stream and that points to an associated buffer that needs to be emptied. These requests are arranged in order by a time at which they need to be written to the video output interface. When the output thread 102 empties a buffer, it marks it as empty and invokes the scheduler function 104 to queue the request in an input queue 108 for the stream to the input thread (for the buffer to be filled). The queue 108 for the Input thread 100 is also arranged in order by a time at which buffers need to be filled.") column 14 lines 26-36 ("Import/Export functions are used to move video data into and out of the media streamer 10. When a video is moved into media streamer 10 (Import) from the client control system, the source of the video data is specified as a file or a device of the client control system. The target of the video data is specified with a unique name within media streamer 10. When a video is moved out of media streamer 10 (Export) to the client control system, the source of the video data is specified by its name within media streamer 10, and the target of the video data is specified as a file or a device of the client control system.") column 19 lines 26-35); and distributing the clip files to relevant storage server nodes (("Storage nodes 16, 17 are managed as a heterogeneous group, each with a potentially different bandwidth (stream) capability

and physical definition. The VS-CREATE command directs media streamer 10 to allocate storage in one or more storage nodes 16, 17 for a multimedia file and its associated metadata. The VS-CREATE command specifies both the stream density and the maximum number of simultaneous users required.") column 9 lines 48-55).

However, Belknap et al. fails to disclose a splitting requirement of the streaming media source files into clip files, the splitting requirement being one of clip placement based on clip time and clip placement based on quantity of clip splitting, and then defining a split files placement strategy and analyzing a clip file allocating requirements, according to the client's requirements.

Kato et al. discloses a splitting requirement of the streaming media source files into clip files, the splitting requirement being one of clip placement based on clip time and clip placement based on quantity of clip splitting, and then defining a split files placement strategy and analyzing a clip file allocating requirements (("The controller 23 analyzes data input to the demultiplexer 26 to determine the re-encoding method for the video stream (change of picture_coding_type and assignment of the quantity of encoding bits for re-encoding) and the re-multiplexing system to send the system to the AV encoder 15 and to the multiplexer 16. The demultiplexer 26 then separates the input stream into the video stream (V), audio stream (A) and the system information (S). The video stream may be classed into data input to the audio decoder 27 and data input to the multiplexer 16. The former is data needed for re-encoding, and is decoded by the audio decoder 27, with the decoded picture being then re-encoded by the AV encoder 15 and thereby caused to become a video stream. The latter data is data copied from

an original stream without re-encoding. The audio stream and the system information are directly input to the multiplexer 16. The multiplexer 16 multiplexes an input stream, based on the information input from the controller 23, to output a multiplexed stream, which is processed by the ECC unit 20 and the modulation unit 21 so as to be sent to the write unit 22. The write unit 22 records an AV stream on the recording medium 100 based on the control signals supplied from the controller 23. The application database information and the operation based on this information, such as playback and editing, are hereinafter explained. FIG. 2 shows the structure of an application format having two layers, that is PlayList and Clip, for AV stream management. The Volume Information manages all Clips and PlayLists in the disc. Here, one AV stream and the ancillary information thereof, paired together, is deemed to be an object, and is termed Clip. The AV stream file is termed a Clip AV stream file, with the ancillary information being termed the Clip Information file. One Clip AV stream file stores data corresponding to an MPEG-2 transport stream arranged in a structure prescribed by the application format. By and large, a file is treated as a byte string. The contents of the Clip AV stream file are expanded on the time axis, with entry points in the Clip (I-picture) being mainly specified on the time basis. When a time stamp of an access point to a preset Clip is given, the Clip Information file is useful in finding the address information at which to start data readout in the Clip AV stream file.") paragraphs 0163-0167 ("STC_Info is now explained. The time domain in the MPEG-2 transport stream not containing STC discontinuous points (discontinuous points of the system time base) is termed the STC_sequence. In the Clip, STC_sequence is specified by the value of

STC_sequence_id. FIGS. 50A and 50B illustrate a continuous STC domain. The same STC values never appear in the same STC_sequence, although the maximum time length of Clip is limited, as explained subsequently. Therefore, the same PTS values also never appear in the same STC_sequence. If the AV stream contains N STC discontinuous points, where N>0, the Clip system time base is split into (N+1) STC_sequences.") paragraph 0317).

Belknap et al. discloses a prior art system and method of video splitting and allocation for clustered video servers, the method comprising: defining a structure of a network packet, a structure of a distributed control file, and a structure of a clip file; analyzing information of streaming media source files; analyzing a clip file allocating requirements; analyzing the streaming media source files to construct a splitting task list and relevant control files, according to the client's requirements; creating several threads to split the streaming media source files, wherein each thread is responsible for splitting a streaming media source file; and distributing the clip files to relevant storage server nodes upon which the claimed invention can be seen as an improvement.

Kato et al. discloses a prior art comparable splitting requirement of the streaming media source files into clip files, the splitting requirement being one of clip placement based on clip time and clip placement based on quantity of clip splitting, and then defining a split files placement strategy and analyzing a clip file allocating requirements.

Thus, the manner of enhancing a particular device (splitting requirement of the streaming media source files into clip files, the splitting requirement being one of clip placement based on clip time and clip placement based on quantity of clip splitting, and

then defining a split files placement strategy and analyzing a clip file allocating requirements) was made part of the ordinary capabilities of one skilled in the art based upon the teaching of such improvement in Kato et al. Accordingly, one of ordinary skill in the art would have been capable of applying this known improvement technique in the same manner to the prior art system and method of video splitting and allocation for clustered video servers, the method comprising: defining a structure of a network packet, a structure of a distributed control file, and a structure of a clip file; analyzing information of streaming media source files; analyzing a clip file allocating requirements; analyzing the streaming media source files to construct a splitting task list and relevant control files, according to the client's requirements; creating several threads to split the streaming media source files, wherein each thread is responsible for splitting a streaming media source file; and distributing the clip files to relevant storage server nodes of Belknap et al. and the results would have been predictable to one of ordinary skill in the art, namely, one skilled in the art would have readily recognized a system and method of producing quality streaming video.

However, Belknap et al., as modified by Kato et al., does not explicitly teach a system and method a video splitting requirement is a manner in which the media source files are split.

Field discloses an apparatus for processing digital video signals to produce a television image by line and field sequential scanning wherein a video splitting requirement is a manner in which the media source files are split.

[Field, column 6 lines 34-67] Since the store write address generator 12 is arranged to address only locations read during the output field corresponding to the

input field and, in one addressing cycle, to address alternate sample locations in the output line scan direction, it is necessary to ensure that the appropriate samples are available to the interpolator 8. In the simple case of 90.degree. rotation illustrated in FIG. 1A, only odd numbered input samples are written in field 1 and the address generator is stepped at the sample rate along the vertical lines S1 to S14. Thus, at the second sample time, the third sample value is required. This requirement can be met by splitting the incoming video signal sample stream in the splitting circuit 4 into a first stream of even numbered samples and a second stream of odd numbered samples. Thus, the odd numbered samples are supplied to one half of the interpolator 8 twice during each line scan period and the even numbered samples are supplied to the other half of the interpolator 8 twice during each line scan period. In this way, the required sample can be generated and written into the location addressed by the store address generator 12. A similar situation exists for rotations of other than 90.degree., but in this case both horizontal and vertical counters of the address generator may be incremented, and interpolation between odd and even numbered samples may be required. Thus, it is necessary to have access at all times to both odd and even numbered samples surrounding an addressed store location in the interpolator 8. For the 90.degree. rotation case it is only necessary to have access to the odd numbered samples during the first cycle of the address generator and to interpolate between odd numbered samples of successive lines during the second cycle in the first field. Similarly, for the second field, only even numbered samples are required.

Belknap et al., as modified by Kato et al., discloses a prior art system and method of video splitting and allocation for clustered video servers, the method comprising: defining a structure of a network packet, a structure of a distributed control file, and a structure of a clip file; analyzing information of streaming media source files; analyzing a clip file allocating requirements; analyzing the streaming media source files to construct a splitting task list and relevant control files, according to the client's requirements; creating several threads to split the streaming media source files, wherein each thread is responsible for splitting a streaming media source file; distributing the clip files to relevant storage server nodes; and splitting requirement of the streaming media source files into clip files, the splitting requirement being one of clip placement based on clip time and clip placement based on quantity of clip splitting, and then defining a split

files placement strategy and analyzing a clip file allocating requirements upon which the claimed invention can be seen as an improvement.

Field discloses a prior art comparable apparatus for processing digital video signals to produce a television image by line and field sequential scanning wherein a video splitting requirement is a manner in which the media source files are split.

Thus, the manner of enhancing a particular device (apparatus for processing digital video signals to produce a television image by line and field sequential scanning wherein a video splitting requirement is a manner in which the media source files are split) was made part of the ordinary capabilities of one skilled in the art based upon the teaching of such improvement in Field. Accordingly, one of ordinary skill in the art would have been capable of applying this known improvement technique in the same manner to the prior art system and method of video splitting and allocation for clustered video servers, the method comprising: defining a structure of a network packet, a structure of a distributed control file, and a structure of a clip file; analyzing information of streaming media source files; analyzing a clip file allocating requirements; analyzing the streaming media source files to construct a splitting task list and relevant control files, according to the client's requirements; creating several threads to split the streaming media source files, wherein each thread is responsible for splitting a streaming media source file; distributing the clip files to relevant storage server nodes; and splitting requirement of the streaming media source files into clip files, the splitting requirement being one of clip placement based on clip time and clip placement based on quantity of clip splitting, and then defining a split files placement strategy and

analyzing a clip file allocating requirements of Belknap et al. and the results would have been predictable to one of ordinary skill in the art, namely, one skilled in the art would have readily recognized a system and method for processing digital video signals to produce sequential scanning.

Consider claims 5 and 18, as applied to claims 1 and 14, respectively. Belknap et al., as modified by Kato et al. and Field, discloses a method wherein the structure of the clip files includes a header of the clip files, an information header of media streams, and the network packet of a media streaming service (Belknap et al., column 6 lines 66-67 and column 7 lines 1-17).

Consider claims 6 and 19, as applied to claims 1 and 14, respectively. Belknap et al., as modified by Kato et al. and Field, discloses a method wherein the analyzing of the streaming media source files includes, analyzing a number of logical time units in the media source files, and obtaining time information of a header and a number of media stream for each logic time unit ((“The dynamic allocation is achieved by grouping two or more of the physical switch interfaces, using appropriate routing headers for the switch 12, into one logical switch interface 18a. The video data (on a read, for example) is then split between the two physical interfaces. This is facilitated by striping the data across multiple storage units as described previously. The receiving node combines the video data back into a single logical stream. As an example, in FIG. 18 the switch interface is rated at 2.times. MB/sec. full duplex i.e., .times. MB/sec. in each direction. But video data is usually sent only in one direction (from the storage node into the switch). Therefore only .times. MB/sec. of video bandwidth is delivered from the storage

node, even though the node has twice that capability (2.times.). The storage node is under utilized. The switch interface of FIG. 19 dynamically allocates the entire 2.times. MB/sec. bandwidth to transmitting video from the storage node into the switch. The result is increased bandwidth from the node, higher bandwidth from the video server, and a lower cost per video stream.") Belknap et al., column 32 lines 60-67 and column 33 lines 1-11).

Consider claims 7 and 20, as applied to claims 6 and 19, respectively. Belknap et al., as modified by Kato et al. and Field, discloses a method further comprising repeating the analysis until all the logic time units are finished and obtaining a total playback duration, a storage space of the media source files, and an ID of the media source files based on the structure of the clip file (("A2. File system 166 reads a part of Sk into a cache buffer in file system 166. A3. File system 166 copies the cache buffer into a buffer in video driver 170. Steps A2 and A3 are repeated multiple times. A5. Video driver 170 copies part of Sk to a buffer in video driver 170. A6. Video driver 170 writes the buffer to video port 1 (176). Steps A5 and A6 are repeated multiple times.") Belknap et al., column 22 lines 58-67 and column 23 line 1).

Consider claims 11 and 24, as applied to claims 1 and 14, respectively. Belknap et al., as modified by Kato et al. and Field, discloses a method wherein the client's requirements include obtaining and analyzing splitting time requirements (("A media streamer in accordance with this invention comprises at least one storage node for storing a digital representation of a video presentation. The video presentation requires a time T to present in its entirety, and is stored as a plurality of N data blocks, each data

block storing data corresponding approximately to a T/N period of the video presentation. The media streamer further comprises a plurality of communication nodes each having at least one input port and at least one output port; a circuit switch connected between the at least one storage node and input ports of the plurality of communication nodes, the circuit switch selectively coupling one or more of the input ports to the at least one storage node to enable the digital representation stored thereat to appear at one or more of the output ports; and at least one control node coupled at least to the plurality of communication nodes and to the at least one storage node for enabling any one of the N blocks to appear at any output port of any of the plurality of communication nodes.") column 3 lines 1-18) and clip placement strategy (("Application commands are issued to media streamer 10 over the control interface. When data load commands are issued, the control node breaks the incoming data file into segments (i.e. data blocks) and spreads it across one or more storage nodes. Material density and the number of simultaneous users of the data affect the placement of the data on storage nodes 16, 17. Increasing density and/or simultaneous users implies the use of more storage nodes for capacity and bandwidth.") Belknap et al., column 8 lines 38-46).

Claims 2, 4, 9-10, 12-13, 15, 17, 22-23 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belknap et al. (US 5668948 A) in view of Kato et al. (US 20020145702 A1) in further view of Field (US 4680630 A) and in further view of Klemets et al. (US 20030236912 A1).

Consider claims 2 and 15, as applied to claims 1 and 14, respectively. Belknap et al., as modified by Kato et al. and Field, discloses a system and method of video

splitting and allocation for clustered video servers. However, Belknap et al., as modified by Kato et al. and Field, does not explicitly disclose a method wherein streaming media source files include an Index file and a Session Description Protocol (SDP) file. Klemets et al. discloses a system and method for embedding a streaming media format header within a session description message wherein streaming media source files include an Index file and a Session Description Protocol (SDP) file ((“A multimedia encoder can capture real-time audio and video data and represent the captured data as multiple streams. For example, audio is typically represented as one stream and video as another. Complex files can have multiple streams, some of which may be mutually exclusive. RTSP specifies a mechanism by which a client can ask a server to deliver one or more of the encoded media streams. RTSP also provides a way for the client to obtain information about the contents of the multimedia presentation via SDP message format prior to delivery of the multimedia. SDP enumerates the available media streams and lists a limited set of auxiliary information (“SDP metadata") that is associated with the collection of streams.”) paragraph 0008 (“For example, some multimedia encoders capture real-time audio and video data and save the content as advanced streaming format (ASF) file (also referred to as active streaming format or advanced system format) as disclosed in U.S. Pat. No. 6,041,345. ASF is a file format specification for streaming multimedia files containing text, graphics, sound, video, and animation. An ASF file has objects including a header object containing information about the file, a data object containing the media streams (i.e., the captured audio and video data), and an optional index object that can help support random access to data within the file. The

header object of an ASF file stores information as metadata that is needed by a client to decode and render the captured data. The list of streams and their relationships to each other is also stored in the header object of the ASF file. Some of the metadata items may be mutually exclusive because the metadata items describe the same information using different spoken languages. SDP fails to adequately describe content encoded in ASF.") paragraph 0010).

Belknap et al., as modified by Kato et al. and Field, discloses a prior art media streamer with console node enabling same isochronous streams to appear simultaneously at output ports or different streams to appear simultaneously at output ports upon which the claimed invention can be seen as an improvement.

Klemets et al. teaches a prior art comparable device (system and method for embedding a streaming media format header within a session description message) wherein streaming media source files include an Index file and a Session Description Protocol file.

Thus, the manner of enhancing a particular device (system and method for embedding a streaming media format header within a session description message) was made part of the ordinary capabilities of one skilled in the art based upon the teaching of such improvement in Klemets et al. Accordingly, one of ordinary skill in the art would have been capable of applying this known improvement technique in the same manner to the prior art media streamer with console node enabling same isochronous streams to appear simultaneously at output ports or different streams to appear simultaneously at output ports of Belknap et al., as modified by Kato et al. and

Field, and the results would have been predictable to one of ordinary skill in the art, namely, one skilled in the art would have readily recognized that a multicast system and method capable of multimedia applications can accept files containing session descriptions.

Consider claims 4 and 17, as applied to claims 2 and 15, respectively. Belknap et al., as modified by Kato et al., Field and Klemets et al., discloses a method wherein the SDP file includes a media type, a number of streams included in a video source, a time length of the video source and an ID of a streaming session ((“In addition, the Real-time Streaming Protocol (RTSP), as described in the IETF RFC 2326, the entire disclosure of which is incorporated herein by reference, is an application-level protocol for control of the delivery of data with real-time properties. RTSP provides an extensible framework to enable controlled, on-demand delivery of real-time data, such as audio and video. Sources of data can include both live data feeds and stored clips. This protocol is intended to control multiple data delivery sessions, provide a means for choosing delivery channels such as user datagram protocol (UDP), multicast UDP and transmission control protocol (TCP), and provide a means for choosing delivery mechanisms based upon RTP. Further, the Session Description Protocol (SDP), as described in the IETF RFC 2327, the entire disclosure of which is incorporated herein by reference, is an application level protocol intended for describing multimedia sessions for the purposes of session announcement, session invitation, and other forms of multimedia session initiation. SDP can be used in conjunction with RTSP to describe and negotiate properties of the multimedia session used for delivery of real-time data.”)

Klemets et al., paragraphs 0006-0007 ("The invention provides for embedding a streaming media format header within a session description message describing content having a plurality of media streams in a streaming media session. In particular, the invention includes software with data structures for encapsulating and embedding the streaming media format header within the session description message. In addition, the invention software embeds a list of content descriptions attributes storing metadata about the media streams within the session description message. A media description field in the session description message stores a stream attribute identifying a media stream associated with the media description field.") Klemets et al., paragraph 0012).

Consider claims 9 and 22, as applied to claims 2 and 15, respectively. Belknap et al., as modified by Kato et al., Field and Klemets et al., discloses a method wherein the splitting of the media source file comprises reading the Index file (Klemets et al., paragraph 0010) to obtain a number of clips, and creating several threads according to the obtained number (("A thread in each storage node 16 that the open request is sent to receive the request and opens the requested stripe file and allocate any needed resources, as well as scheduling input from disk (if the stripe file contains the first few segments).") Belknap et al., column 17 lines 35-39).

Consider claims 10 and 23, as applied to claims 9 and 22, respectively. Belknap et al., as modified by Kato et al., Field and Klemets et al., discloses a method comprising reading the Index file and obtaining a play task list including several items, and sending each item in the play task list to relevant threads creating a splitting task (("Three additional commands support automation control systems in the broadcast

industry: VS-CONNECT-LIST, VS-PLAY-AT-SIGNAL and VS-RECORD-AT-SIGNAL. VS-CONNECT-LIST allows applications to specify a sequence of play commands in a single command to the subsystem. Media streamer 10 will execute each play command as if it were issued over the control interface but will transition between the delivery of one stream and the next seamlessly.") Belknap et al., column 9 lines 56-64).

Consider claims 12 and 25, as applied to claims 11 and 24, respectively. Belknap et al., as modified by Kato et al., Field and Klemets et al., discloses a method wherein the clip placement strategy includes a data placement strategy, a hot level of a source video, and an algorithm for allocating clips to the relevant storage server nodes (("As demand for "hot" movies grows, media streamer 10, through an MRU-based algorithm, decides to move key movies up into cache. This requires substantial cache memory, but in terms of the ratio of cost to the number of active streams, the high volume that can be supported out of cache lowers the total cost of the media streamer 10.") Belknap et al., column 12 lines 8-13 ("Algorithms that control the placement and distribution of the content across all of the storage media enable delivery of isochronous data to a wide spectrum of bandwidth requirements. Because the delivery of isochronous data is substantially 100% predictable, the algorithms are very much different from the traditional ones used for other segments of the computer industry where caching of user-accessed data is not always predictable.") Belknap et al., column 12 lines 19-26).

Consider claims 13 and 26, as applied to claims 1 and 14, respectively. Belknap et al., as modified by Kato et al., Field and Klemets et al., discloses a method wherein the structure of the network packet complies with a streaming media data message in

international real-time transmission protocol, including media type head, serial number, time stamp, synchronous signal, and main media data ((“In one embodiment, the streaming media format file header is encoded as a data URL. Typically, URLs refer to content that it stored at a remote location. However, in the case of a data URL, the content is stored inside the URL itself. The specification for the data URL allows arbitrary binary data to be included, if Base64 encoding is used to encode the binary data into a subset of the US-ASCII character set. In addition, the header attribute 504 comprises a type tag identifying the value as representing the streaming media format header. For example, the data URL allows a multipurpose Internet mail extension (MIME) tag type to be specified. The MIME type is used to identify the type of content that is contained within the data URL. In one embodiment, the MIME type "application/vnd.ms.wms-hdr.asfv1" identifies that a data URL contains a streaming media format file header.”) Klemets et al., paragraph 0049 ("where <Stream ID> is replaced with the stream identifier of the stream in the streaming media format file that corresponds to the media that is described in the SDP media description section (e.g., media description 514 or media description 516). The stream attribute 508, 510 establishes a mapping between the stream identifier and the URL in a control attribute of the media description field 514, 516. If the streaming media format is ASF, the stream attribute 508, 510 gives the numerical ASF stream identifier of a stream identified in the ASF header 504. The stream attribute 508, 510 is used to provide a mapping between a media description field and a stream in the streaming media format file. An example of the control attribute and the stream attribute 508, 510 follow.”) Klemets et al., paragraph

0056 ("More particularly, given videos v1, v2, . . . , and streams s1, s2, . . . playing these videos, each stream sj plays one video, v(sj), and the time predicted for writing the k-th segment of v(sj) is a linear function where a(sj) depends on the start time and starting segment number, r(sj) is the constant time it takes to play a segment, and t(sj,k) is the scheduled time to play the k-th segment of stream sj.") Belknap et al., column 25 lines 8-18 ("The storage node thread sends a response back to the communication node 14 with the handle (identifier) for the stripe file.") Belknap et al., column 17 lines 40-42 ("Except as indicated below, API functions are processed synchronously, i.e., once a function call is returned to the caller, the function is completed and no additional processing at media streamer 10 is needed. By configuring the API functions as synchronous operations, additional processing overheads for context switching, asynchronous signaling and feedbacks are avoided. This performance is important in video server applications due to the stringent real-time requirements.") Belknap et al., column 20 lines 56-64).

NEW GROUND(S) OF REJECTION

Claims 14-26 are rejected under 35 USC 101 since the claims are directed to non-statutory subject matter. Claims 14-26 recite a computer program product that includes a computer readable medium which appears to cover both transitory and non-transitory embodiments. The United States Patent and Trademark Office (USPTO) is required to give claims their broadest reasonable interpretation consistent with the specification during proceedings before the USPTO. *See In re Zletz*, 893 F.2d 319 (Fed. Cir. 1989) (during patent examination the pending claims must be interpreted as

broadly as their terms reasonably allow). The broadest reasonable interpretation of a claim drawn to a computer readable medium typically covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable medium, particularly when the specification is silent. *See* MPEP 2111.01. When the broadest reasonable interpretation of a claim covers a signal *per se*, the claim must be rejected under 35 U.S.C. § 101 as covering non-statutory subject matter. *See In re Nuijten*, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007) (transitory embodiments are not directed to statutory subject matter) and *Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S.C. § 101*, Aug. 24, 2009; p. 2.

The Examiner suggests that the Applicant add the limitation "non-transitory computer readable medium" to the claims in order to properly render the claims in statutory form in view of their broadest reasonable interpretation in light of the originally filed specification.

(10) Response to Argument

Applicant argues that Belknap et al., as modified by Kato et al. and Field, does not suggest processing a client's requirement to obtain a splitting requirement, where a user's requirements therefore specify whether the clip placement is to be based on clip time or based on quantity of clip splitting as in Claims 1, 14 and 27.

Examiner respectfully disagrees. The Belknap et al. reference, in column 8 lines 38-55, teaches a method wherein an incoming data file is split into segments, interpreted to read on the Claimed clip, and spread across one or more storage nodes,

depending on the material density and the number of simultaneous users of the data, interpreted to read on the Claimed quantity splitting requirement, affecting the placement of the data on storage nodes. The Kato et al. reference, in paragraph 0163, teaches a method of analyzing a data stream and encoding said stream that is destined for an audio or a video decoder, interpreted to read on the Claimed client. The Kato et al. reference, in paragraph 0167, further teaches a method wherein said encoded stream is expanded on a time axis, using a clip information file to determine where to start the stream, interpreted to read on the Claimed clip time splitting requirement.

<u>Applicant argues that Belknap et al., as modified by Kato et al. and Field, does not suggest defining a split files placement strategy according to the client's requirements as in Claims 1, 14 and 27.</u>

Examiner respectfully disagrees. The Kato et al. reference, in paragraph 0163, teaches a method of analyzing a data stream and encoding said stream that is destined for an audio or a video decoder, interpreted to read on the Claimed client. The Belknap et al. reference, in column 8 lines 38-55, teaches a method wherein an incoming data file is split into segments, interpreted to read on the Claimed clip, and spread across one or more storage nodes, depending on the material density and the number of simultaneous users of the data, interpreted to read on the Claimed quantity splitting requirement, affecting the placement of the data on storage nodes.

<u>Applicant argues that Belknap et al., as modified by Kato et al. and Field, does not analyze a client's requirements as in Claims 1, 14 and 27.</u>

Examiner respectfully disagrees. The Kato et al. reference, in paragraph 0163, teaches a method of analyzing a data stream and encoding said stream that is destined for an audio or a video decoder, interpreted to read on the Claimed client. The Belknap et al. reference, in column 8 lines 38-55, teaches a method wherein an incoming data file is split into segments, interpreted to read on the Claimed clip, and spread across one or more storage nodes, depending on the material density and the number of simultaneous users of the data, said material density and number if simultaneous users is interpreted to read on the Claimed analyzing requirement.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section **(9)** above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

/Mark D Fearer/

A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:

/N. Le/

Director, Technology Center 2400

Conferees:

/Tonia LM Dollinger/

Supervisory Patent Examiner, Art Unit 2443

/George C Neurauter, Jr./

Primary Examiner, Art Unit 2443